



Report of the Task Force on an IT Strategy for PDS and an implementable solution for the direct transfer of subsidy for Food and Kerosene



October 2011

Members of the Task Force

1. **Chairman, Unique Identification Authority of India – Chairman of the Task Force**
2. **Expenditure Secretary - Member**
3. **Secretary, Department of Financial Services - Member**
4. **Secretary, Petroleum and Natural Gas - Member**
5. **Secretary, Chemicals and Fertilizer - Member**
6. **Secretary, Rural Development - Member**
7. **Secretary, Agriculture -Member**
8. **Secretary, Food and Public Distribution - Member**
9. **Director General and Mission Director, Unique Identification Authority of India - Member**

**Task Force on an IT Strategy for PDS and
An implementation solution for the direct transfer of subsidy
for PDS Food and Kerosene**

Approval of Report

1. The Report of the Task Force on an IT Strategy for PDS and an implementation solution for the direct transfer of subsidy for PDS Food and Kerosene is hereby approved.
2. This would be submitted to Hon'ble Finance Minister in October, 2011.



(R. S. Sharma)
Director General, UIDAI



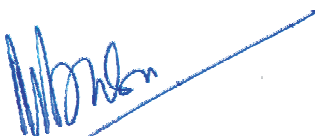
(Sumit Bose)
Secretary, Expenditure



(D.K. Mittal)
Secretary, Financial Services



(Dr. Sutanu Behuria)
Secretary, Fertilizers



(P.K. Basu)
Secretary, Agriculture



(B.K. Sinha)
Secretary, Rural Development



(G.C. Chaturvedi)
Secretary, Petroleum and
Natural Gas



(B.C. Gupta)
Secretary, Food & Public
Distribution



(Nandan Nilekani)
Chairman, Task Force & Chairman, UIDAI

Table of Contents

EXECUTIVE SUMMARY	1
ABBREVIATIONS	5
1. INTRODUCTION	6
2. CHALLENGES FACED BY PDS TODAY	9
3. CURRENT STATUS OF COMPUTERISATION IN STATES	11
3.1 COMPUTERISATION IN STATES	11
3.1.1 Andhra Pradesh	11
3.1.2 Chhattisgarh	11
3.1.3 Delhi	12
3.1.4 Gujarat	12
3.1.5 Haryana	12
3.1.6 Karnataka	13
3.1.7 Kerala	13
3.1.8 Madhya Pradesh	13
3.1.9 Tamil Nadu	13
3.2 BEST PRACTICES FROM STATES USING IT IN PDS	14
3.3 LEARNINGS FROM COMPUTERIZATION EFFORTS IN STATES	15
4. NEED FOR A NATIONAL INFORMATION UTILITY	16
4.1 RECOMMENDATIONS OF THE TAGUP	17
4.2 PDS NETWORK – A NATIONAL INFORMATION UTILITY FOR PDS	18
4.3 MISSION TEAM AT THE MOCAFPD AND MOPNG	19
4.4 LEGAL STRUCTURE	19
4.5 ORGANIZATION STRUCTURE	20
4.6 FUNDING AND REVENUE	21
4.7 CONTRACTUAL OBLIGATIONS AND PERFORMANCE EVALUATION	21
4.8 INCUBATION	22
4.9 INDEPENDENCE OF PDSN AND STRATEGIC CONTROL WITHIN GOVERNMENT	23
4.9.1 Independence of PDSN management	23
4.9.2 Strategic Control within Government	23
5. A COMMON SOLUTION ARCHITECTURE FOR ALL STATES	25
5.1 SOFTWARE ARCHITECTURE	26
5.2 PHASED IMPLEMENTATION APPROACH	27
5.2.1 Phase I (Supply Chain Management System)	27
5.2.2 Phase II (Core Subsidy Management System)	29
5.3 PDSN OPERATIONS	32
5.3.1 Data Centre Operations	32
5.3.2 Contact Centre operations	32
5.3.3 A Network Operations Centre (NOC)	32
5.3.4 Analytics and fraud management	32

6.	ONBOARDING OF STATES	33
6.1	MOUS BETWEEN INCUBATING ENTITY/PDSN AND VARIOUS STAKEHOLDERS	33
6.2	ONBOARDING OF STATE GOVERNMENTS	33
6.2.1	Onboarding team	33
6.2.2	Onboarding toolkit	33
6.2.3	Standardised content	34
6.3	EMPANELMENT OF ECOSYSTEM PARTNERS	34
6.3.1	Solution consultants	34
6.3.2	Data digitization agencies	34
6.3.3	Software solution providers	35
6.3.4	Training agencies	35
6.3.5	IEC (Information, Education, Communication) agencies	35
6.3.6	Monitoring and audit agencies	35
6.4	ROLLOUT	35
6.4.1	Step I – Project initiation	36
6.4.2	Step II – Pilot execution	36
6.4.3	Step III –State-wide rollout	36
7.	ROLE OF AADHAAR	37
7.1	RATION CARD REGISTRATION	37
7.2	ADDRESSING DIVERSION AND PILFERAGE	38
7.3	AUTHENTICATION SERVICES	38
7.4	AADHAAR-LINKED PAYMENTS	39
8.	ROLES AND RESPONSIBILITY OF VARIOUS STAKEHOLDERS	40
8.1	MOCAFPD, GOVERNMENT OF INDIA	40
8.2	MOPNG, GOVERNMENT OF INDIA	40
8.3	STATE GOVERNMENTS	40
8.4	DFS AND DOE, MINISTRY OF FINANCE	40
8.5	NIC	41
8.6	UIDAI	41
8.7	PDSN	41
9.	IMPLEMENTATION ACTION PLAN AND TIMELINES	42
10.	ANNEXURE I: TERMS OF REFERENCE	43
11.	ANNEXURE II: DRAFT MOU BETWEEN INCUBATING ENTITY/ PDSN AND STATES	44

Executive Summary

The Public Distribution System (PDS) provides subsidized food and fuel to a large number of people in India. Of all the social safety net programs of Government of India and various State Governments, the subsidies on food and fuel are perhaps the most important ones. Affordable food is a source of sustenance for a large segment of the population; affordable kerosene is extensively used for cooking and lighting by the poor.

Given the importance of food and kerosene for sustenance, it is not surprising that these subsidies account for a large fraction of the total subsidy expenditure of the Government of India. However, deficiencies in the implementation of PDS have plagued the system. In many cases, the true beneficiaries of these subsidies suffer due to wholesale problems such as large-scale pilferage and diversion, and retail level problems such as duplicates and ghost beneficiaries, wrongful exclusion and inclusion, availability and quality of the commodities, as well as Fair Price Shop level pilferage. While implementation varies from state to state, there are a number of areas in the PDS system which requires immediate attention.

A number of suggestions have been made over time to reform PDS. These reforms include:

1. Grassroots level transparency that include increased social audits, painting of PDS offtake on walls of the FPS shops, painting of trucks;
2. Beneficiary empowerment through the use of coupons, or technology such as smartcards, or even direct cash transfers;
3. Monitoring the movement of goods through the use of technology, such as GPS tracking of trucks; and
4. Increased monitoring, supervision, accountability, and transparency.

Along with the reforms suggested above, the following features also need to be accounted for in order to attempt a comprehensive solution for deficiencies in PDS:

1. A solution that is incentive-compatible for all stakeholders, so that they benefit by participating in the system, rather than trying to benefit through subverting the system. For example, commission rates for FPS owners should be set to ensure that they earn adequate returns on their investment;
2. Strengthening the public provision of the State with appropriate use of technology, to bring it on par with best practises in the field. Strategic control needs to be retained within Government at all times;
3. A token-agnostic technology solution that can accept physical coupons, smartcards, electronic coupons, and even facilitate direct cash transfers where different states may choose from different solutions based on their own requirements;

4. Provide beneficiaries maximum choice:
 - a. choice of location;
 - b. choice of the mix of commodities;
 - c. choice to purchase commodities in convenient quantities, and in any number of instalments; and
 - d. choice to purchase commodities or receive a direct transfer of subsidy.
5. Aadhaar can be used in PDS to simplify a number of processes:
 - a. Simplification of Ration Card registration, so that beneficiaries can apply for a Ration Card conveniently;
 - b. Cleaning up the beneficiary database;
 - c. Use of Aadhaar authentication as appropriate; and
 - d. State Governments can use Aadhaar Payments Bridge and Aadhaar Enabled Payments Systems to channel subsidy funds for approved commodities to Aadhaar-enabled Bank Accounts.

Keeping in view the proposed National Food Security Bill it is imperative to undertake these reforms at the earliest.

Given the complexity, scale, and mission-critical nature of PDS operations, a dedicated professional institution is necessary to design and operate the solution centrally. The Task Force recommends the setting up of a National Information Utility called the Public Distribution System Network (PDSN), which operates as a technology back-office and central system for MoCAFPD, MoPNG, and State Governments¹. It will provide support in IT-intensive areas such as development, operation and maintenance of technology, supply chain management, transparency portal, and electronic payments. It will also provide integration with the IT systems of other key stakeholders and other e-governance systems as they are designed over time.

In order to achieve these outcomes, PDSN should be staffed professionally. It will promise minimum service levels to States through Service Level Agreements, and lower costs by offering a common customizable platform. The development of a common software solution will also ensure that best practices and successes observed in any one state can be rapidly deployed in all other states.

The Task Force recognises that the MoCAFPD will need to undertake a number of immediate measures to achieve end to end computerisation in order to implement the orders of the H'ble Supreme Court. The recommendations of the Task Force will provide the basis for implementing some of the long

¹ A similar NIU structure has been given an in-principle approval by Ministry of Finance for the Goods and Services Tax Network (GSTN). GSTN will provide IT and operations services to the Central Board of Excise and Customs and State Governments in order to implement the Goods and Services Tax throughout the country.

term institutional needs of IT-enabled reform in PDS. The recommendations should also complement the immediate measures that the MoCAFPD will be undertaking in this regard.

While PDSN operates the central common infrastructure, a number of customizations will have to be performed at the state level. The IT infrastructure being put in place such as State Data Centres and the SWAN network will need to be integrated by each participating state with PDSN. The State units of the NIC can be actively engaged by the State Governments when PDSN is leveraged. The services of the NIC can be utilised by the State Governments while implementing the computerisation project leveraging the PDSN.

The Task Force recognises the present efforts at computerisation by different states and NIC. The NIC has also been engaged in building a common software. The PDSN seeks to consolidate, complement and converge these efforts. It is a value addition and offers a number of additional modules to the states to strengthen their ongoing computerisation efforts. States that already have some computerization can enhance their capability by using selective modules from PDSN. States that have very little or no computerization can use the entire software platform from PDSN. The proposed National Food Security Bill has necessitated a major advancement of IT capability in the PDS reform which is possible through PDSN. The creation of a PDSN offers scale, speed, cost-effectiveness, empowerment, quality, federal autonomy, possibility of asynchronous roll-out and building of an ecosystem. The states will also have a choice of subsidy transfer modules while partnering with the PDSN and the linkage with Aadhaar will take place in Phase II of partnering with the PDSN. While implementing PDSN, steps will have to be taken by each State to align their PDSN roll-out with their existing IT investments to derive full benefits and reduce duplication.

The Task Force believes that participation of States in PDSN should be voluntary, and should not affect existing computerization efforts. The States are undertaking a number of initiatives regarding computerisation of PDS. The recommendations of the Task Force in no way impede the progress of these initiatives. States can opt to partner with the PDSN or can continue their computerisation efforts as before. The Department of Food and Public Distribution had suggested that the proposed PDSN may perform the role of the “separate and dedicated institutional mechanism” to be incorporated as per the orders of the Hon’ble Supreme Court. The Task Force deliberated the issue and recommended that PDSN proposed in this Report is a long term solution that envisages putting in place an institutional mechanism to undertake end to end computerisation. The report in no way affects the immediate measures that need to be undertaken by the Department as per the orders of the Hon’ble Supreme Court since this report primarily focuses on the long term, strategic, institutional mechanism that needs to be put in place for an IT strategy for PDS. Further, the solution comprising of the central system at PDSN and state level customizations should be fully aligned with the framework and guidelines of the National e-Governance plan.

The solution will be implemented in two phases. Phase I of the solution focuses on providing information visibility in the supply chain using the Supply Chain Management System (SCM-PDS). Phase I of the solution is not dependent upon Aadhaar. Phase II of the solution will implement the Core Subsidy Management System (CSMS-PDS), which will leverage Aadhaar. The States can also opt in for particular

modules and solutions (like payments, fraud analytics etc) from the PDSN while continuing with their existing efforts. The States can also customize various parameters based on local needs such as the eligibility, type and quantity of commodities, the type of token (coupon, smartcard, electronic, mobile phone), the prices of food and kerosene, and the form of direct subsidy transfer.

This solution, when deployed, can also help address leakages and other challenges in the PDS due to the following reasons:

1. Creating information visibility of supply chain will reduce diversion;
2. Moving commodities at market price all the way till the sale point (or as close to the sale point as possible) will reduce incentives for diversion;
3. Real-time fraud analytics will help in monitoring and apprehending fraud;
4. The proposed electronic Ration Card registration process will allow beneficiaries to get their Ration Cards with ease;
5. Entitlement portability will put bargaining power into hands of beneficiaries, which will make it possible for them to relocate or migrate, without worrying about losing their government benefits;
6. Entitlement portability will also bring about competition among FPSs, due to which shops that adulterate, or are unfriendly to the customers will eventually see lesser business; and
7. Self-service inquiries through mobile phones, a toll-free contact centre, and online account status on the internet will empower beneficiaries, since this establishes a direct and transparent grievance redressal channel.

The social programs of India are complex systems with millions of participants that have evolved over the last few decades. Hundreds of millions of beneficiaries depend upon these programs for basic sustenance. Such systems can only be reformed through systematic change management. Eventual success will hinge upon political will, good governance, incentive-compatible solution design, judicious use of technology, a structured transition plan, meticulous project management, effective supervision, people's participation, audit, and execution. The Task Force believes that the ideal solution will involve using technology to strengthen the role of Government in public provision, while also leveraging some of the efficiencies that the market has to offer.

The Task Force is only recommending an IT strategy for PDS reform. It does not address the other policy initiatives that may have to be undertaken to improve the PDS functioning. The Task Force believes that a strong, robust IT infrastructure backbone is critical for reforming the functioning of the PDS.

Abbreviations

AEBA	Aadhaar-enabled Bank Account
APB	Aadhaar Payments Bridge
CSMS-PDS	Core Subsidy Management System (PDS)
DOE	Department of Expenditure
DFS	Department of Financial Services
DIT	Department of Information Technology
FCI	Food Corporation of India
IT	Information Technology
MOF	Ministry of Finance
MOCAFPD	Ministry of Consumer Affairs, Food and Public Distribution
MOPNG	Ministry of Petroleum and Natural Gas
NIC	National Informatics Centre
OMC	Oil Marketing Company
PDS	Public Distribution System
SLA	Service Level Agreement
SCM-PDS	Supply Chain Management System (PDS)
UIDAI	Unique Identification Authority of India

1. Introduction

The Finance Minister, Shri Pranab Mukherjee, in the Budget Speech of 2011-12 referred to a Task Force constituted to work out the modalities for the proposed system of direct transfer of subsidy for Kerosene, LPG and fertilizers. He stated:

27. The Government provides subsidies, notably on fuel and food grains, to enable the common man to have access to these basic necessities at affordable prices. A significant proportion of subsidized fuel does not reach the targeted beneficiaries and there is large-scale diversion of subsidized kerosene oil. A recent tragic event has highlighted this practice. We have deliberated for long the modalities of implementing such subsidies. The debate now has to make way for decision. To ensure greater efficiency, cost effectiveness and better delivery for both kerosene and fertilizers, the Government will move towards direct transfer of cash subsidy to people living below poverty line in a phased manner.

28. A task force headed by Shri Nandan Nilekani has been set-up to work out the modalities for the proposed system of direct transfer of subsidy for kerosene, LPG and fertilizers. The Interim report of the task force is expected by June 2011. The system will be in place by March 2012.”

The Task Force submitted its Interim Report on Direct Transfer of Subsidies on Kerosene, LPG, and Fertilizers to the Finance Minister in July 2011. The report noted that direct transfer of subsidy in the case of Kerosene would be difficult to achieve without reforming the PDS.

Subsequently, the Terms of Reference of the Task Force were extended² to include an IT strategy for the Public Distribution System (PDS) along the following lines:

1. Identify and suggest required changes in the existing systems, processes and procedures, IT frameworks and supply chain management;
2. Recommend institutional mechanisms to implement the IT strategy for PDS; and
3. Examine and suggest an implementable solution for direct transfer of subsidies on food and kerosene to intended beneficiaries with the use of Aadhaar numbers (Unique Identification numbers), Aadhaar-enabled transactions and Aadhaar authentication infrastructure.

The need for computerization and effective use of technology in PDS has been recommended by a number of important Committees that have comprehensively studied the issue of PDS reform. The Task Force has studied these reports and recommendations before finalizing its recommendations.

The **Central Vigilance Committee** under the Chairmanship of Justice D.P.Wadhwa appointed by the Hon'ble Supreme Court³ recommended that monitoring the functioning of PDS operations through the use of information and communication technology should be given the highest priority. It also recommended “least human intervention and end-to-end automation and computerization of the complete PDS chain.”

² The Terms of Reference were extended on July 13th, 2011 and the notification is placed in Annexure I.

³ Report on computerization of PDS Operations dated 23.2.2009 submitted to the Hon'ble Supreme Court in People's Union for Civil Liberties v. Union of India, W.P. (Civil) No.196 of 2001

The **Expert Committee on National Food Security Bill**⁴ while commenting on PDS reform opined that “comprehensive computerization of the PDS network starting from the allocation of the grain to the final delivery to the targeted beneficiary will go a long way in plugging diversion of grain, bogus ration cards and delivery of poor quality of foodgrains to beneficiaries.”

The **Resolution of the State Food Secretaries** in July 2010 clearly mandated, inter alia, that rapid but phased roll out of IT in PDS must be given priority through computerization of the TPDS network, smart card based delivery of foodgrains, issue of ration cards with biometric identification and iris technology.

In addition, PDS reform has been considerably discussed within Government, both at the Central level as well as the States. A number of reports have suggested various steps to improve the existing delivery mechanisms of the PDS.

The Task Force, after various deliberations, recognized that the computerization of the PDS was a very complex task spanning multiple levels of Governments, multiple departments, multiple stakeholders and a complex inter-connected eco-system. While recognizing that a multi-pronged strategy is required to reform the PDS, the Task Force considers the extensive and innovative use of technology in the PDS to be an effective means to reform the PDS. This would result in a more enhanced, efficient and transparent delivery of services based on participatory and well-defined workflow based systems. This Report essentially limits itself to the IT strategy for PDS reform. It does not relate to the business rules and policy decisions regarding allocations, beneficiary identification, price of food, quotas, FPS selection and issues of storage. The Task Force believes that a robust IT infrastructure is a *sine qua non* for the reform of the PDS. This report lays down the way forward to undertake this complex task.

The Task Force presented the broad contours of an IT Strategy for PDS to the State Food Ministers in a Conference held on 20th and 26th of July, 2011 under the Chairmanship of Prof. K.V.Thomas, Union Minister of State (Independent charge), Ministry of Consumer Affairs, Food and Public Distribution.

The Task Force recognizes that a number of states have undertaken remarkable reform in their PDS by using technology and commends their efforts. In this regard, a workshop on best practices in computerization by the States was also held on 17th August 2011 to understand the varied uses of technology adopted by the States in their PDS delivery mechanisms. The National Informatics Centre (NIC) also presented the efforts being undertaken by them for computerization in various states. The details of the computerization efforts undertaken are discussed in subsequent chapters.

The Supreme Court in *People’s Union for Civil Liberties v. Union of India and Ors*⁵ has laid down the roadmap for computerization of PDS across the country. The Task Force has recommended a robust institutional mechanism to undertake computerization.

4 The Expert Committee on National Food Security Bill was chaired by Dr. C.Rangarajan, Chairman of the Economic Advisory Council to the Prime Minister.

5 W.P(C) No.196/2001 dated 14.9.2011. The Supreme Court has, inter alia, referred to the suggestion of the High Powered committee suggesting a separate and dedicated institutional mechanism be incorporated to look after the progress of computerization of PDS.

The Government has also recently decided to include PDS under the National e-Governance Plan (NeGP). Hence, the MoCAFPD while implementing the recommendations of the Task Force needs to further look at aligning the guidelines related to NeGP to support their initiatives.

This report focuses on a detailed IT strategy for PDS including the institutional structures and processes required for effective use of IT in PDS as well as an implementable solution of direct transfer of subsidies on food and kerosene to intended beneficiaries. While this Report does not dwell into the specificities of the IT requirements, it gives a broad strategy and roadmap for effectively using IT in reforming the PDS. However, use of technology alone will not solve all the ills plaguing the PDS delivery mechanism and it is not a panacea in itself. Strong political will, effective supervision and audit, enhanced transparency, thorough implementation, social audit as well as people's participation would also be required for a comprehensive reform of the PDS.

2. Challenges faced by PDS today

With a network of more than 4.62 lakh fair price shops (FPS) distributing commodities worth more than Rs 30,000 crore annually to about 180 million families, the PDS in India is perhaps the largest distribution network of its kind in the world. However, there are huge challenges faced by the PDS across the country.

Challenges

In 2008, an 'As-is' study for TPDS was carried out by National Institute of Smart Government in four states viz. Andhra Pradesh, Assam, Chhattisgarh and Delhi. The team covered various aspects of the functional areas with the perspective of People, Process and Technology. Challenges in the following six key functional areas were studied: allocation, movement, storage, finance, licensing and regulation of FPSs, and grievance redressal.

The challenges noted were:

Allocation

1. Non – availability / delay of utilization information to the Centre from States
2. Non - availability / delay of closing balance details and updated card status at State level from the districts, block and FPS levels.
3. Inaccurate data reporting by FPS
4. Longer time taken for allocation cycle

Movement

1. Absence of truck tracking system leading to delayed delivery, diversions, siphoning etc.
2. Non-standard transportation rates
3. Cartel formation by transporters
4. Late submission of demand drafts/cash by FPS for lifting leads to sub optimal route planning

Storage and Quality Control (QC)

1. Non-availability of stock positions in few states leads to inappropriate allocation and excess stock build up at intermediary storage points
2. Poor quality of packaging leads to loss of food grains
3. Extensive use of hooks leads to spillage

4. Insufficient godown capacity of intermediate storage points result in multiple shipments
5. Temperature fluctuations due to weather leads to variations in weight of food grains
6. Loss of food grains due to infestation
7. Manpower shortage leads to delay in dispatches and non compliance to policies

Finance

1. Poor financial condition of FPS and GPSS / WCCS (in Assam)
2. Cost and time incurred on preparation of multiple DDs by FPS results in increased financial burden on the FPS/GPSS

Licensing and Regulation

1. Inadequate monitoring leading to diversion of stock
2. Selection of inappropriate dealer leading to malpractices
3. Lack of standard selection procedure and guidelines
4. Difficulty in identification of elapsed licenses

Grievance Redressal

1. Absence of response and monitoring mechanism because of which, higher authorities are unaware of number and status of grievances registered and thus grievances are not getting resolved on time
2. The service level agreements for grievance redressal are not clearly defined
3. Bogus complaints result in wastage of officials' time
4. Lack of integration between various complaint and registration channels leads to multiple actions at different levels

Based on the above study, a scheme for computerisation of TPDS operations in select districts of four pilot States of Andhra Pradesh, Assam, Chhattisgarh and Delhi was taken up by the Department of Food and Public Distribution.

Apart from the challenges identified above, there remains the fundamental challenge of having an accurate database of eligible beneficiaries. The existing databases are plagued with inclusion and exclusion errors in identification of beneficiaries and fake ration cards.

Choice and convenience for the beneficiary has not been adequately addressed in the present

3. Current status of Computerisation in States

The computerization in PDS in States is at varying degrees of evolution. While a few states have extensively used IT to reform the PDS delivery mechanism to make it more transparent and effective, many states have not undertaken significant interventions in using technology to reform their PDS. The effort of the Task Force is to understand the best practices undertaken by the States in order to utilize them in framing a national strategy of IT for PDS.

3.1 Computerisation in States

Detailed presentations were made to the Task Force by many states that have undertaken computerization in PDS. While many states are on the path of computerization, a representative summary of the efforts undertaken by some States is detailed below:

3.1.1 Andhra Pradesh

The State has taken initiatives for computerization of the ration card household data. A household survey was carried out for a large number of parameters of which ration card details were a subset. For this Ration Card Designated Photography Location (DPL) centers were setup to collect/ verify the declaration forms and to enter beneficiary data in the computer. Iris scanning for each member of the family was also done. The Ration card household application is a client-server based application. The data at present is not centralized and hence beneficiary verification across districts is not taking place.

Bar-coded coupons were also introduced in the State. The coupons were given after manual verification of the beneficiary's details. This was a difficult process and hence personalized bar-coded coupons were introduced as a pilot for kerosene and rice. These coupons were delivered at the door-step of the card holder. However no mechanism has been set up for scanning of these coupons for verifying the actual distribution.

Aadhaar enrolment is currently in progress in seven districts. The State Civil Supplies Department is implementing a smart-card based Point of Sales (PoS) solution in all FPSs covering the entire State in a phased manner. As part of a pilot in Maheswaram Mandal of Rangareddy District, Smart Cards have been issued to the beneficiaries covering all the 36 FPSs and these FPSs are also equipped with PoS terminals for the purpose of authenticating/verifying beneficiaries before commodity distribution. A grievance redressal module was developed and put in place to log calls from beneficiaries.

A pilot has been initiated in Krishna and Nellore districts for monitoring the transportation of essential commodities by using GPS from the MLS point to the FPS. After the pilot is completed, the same will be extended to other districts.

3.1.2 Chhattisgarh

Efforts of Chhattisgarh for PDS computerisation are relatively more mature than other States/UTs. Chhattisgarh has created a unified ration card database and bar-coded ration cards are issued. The

maintenance of the ration cards database in the State is done through a web based application module. Similarly, web based application is used for automated allotment to FPSs and 108 warehouses of 120 distribution centers are computerised where PDS stocks and sales figures of the previous month of all the FPSs are entered into the computerised system for generating stock position at any point. Various reports like ration card holder details, FPS details, FPS wise allotment and lifting details, rice procurement details and complaints lodged and their status are generated by computer system on web, which are accessible to the public as well. Similarly, whenever PDS commodities are dispatched to a FPS from the warehouse, an e-mail / SMS is sent to all the e-mail IDs /mobile numbers registered for that FPS. A call-centre with a toll free number is in place since 2008 to get necessary information about the Department of Food and lodging of complaints. Complaints are monitored at all levels through the system. This web-based software also provides a method of beneficiary participation in monitoring of PDS where they can register their mobile number or e-mail address and can participate in the monitoring of PDS.

A Centralised Online Real time Electronic PDS (COREPDS) scheme is being considered by State Government to be launched in 175 FPSs in Raipur city which would allow a beneficiary to obtain ration from any of these FPSs

3.1.3 Delhi

In NCT of Delhi, a database containing a total of 13,67,154 ration cards have been cleansed and migrated to the NIC system. Allocation and ration card management application modules have been customized for the Delhi Government by NIC. The Ration Card survey data has been digitized and laminated cards have been issued.

3.1.4 Gujarat

In Gujarat, a comprehensive application form has been prescribed for issuance of bar coded Ration Cards in lieu of existing ones. Initially, photograph and biometric details of at least one family member of the card holder are being captured at the time of issuance of bar-coded Ration Cards. The State Food and Civil Supplies Corporation supplies grain to the FPSs through 192 distribution centers. Ration Card computerization has been done across the State. Bar Coded ration card and biometric based bar-coded coupon system is being introduced. Bar-coded Ration Cards are presented to eGram (kiosk operator in rural area working under the e Governance program), who in turn issue printed coupon to the beneficiary subject to online verification based on biometric data. The type and the quantity of the commodities are entered in the coupons as per the choice of the beneficiary. Over 89, 000 bar coded Ration Cards have been issued in 25 districts. This software has been developed and implemented by the State NIC unit. Issuance of more than 1 crore bar-coded Ration Cards in all 16,000 FPS is to be completed by March 2012.

3.1.5 Haryana

The State proposes to issue smart cards at each level of the distribution chain, i.e. to the transporter, the FPS dealer and the consumer. Three FPSs in Panchkula are fully computerized. Within four months,

Smart Cards will be issued to all beneficiaries in four blocks: Ambala, Gharaunda, Sirsa, and Sonapat. This is being done on a pilot basis.

3.1.6 Karnataka

The Karnataka model does not contemplate issuing a smart card to the beneficiaries. The biometric details of members of each family, which constitute a unit for the purposes of allotment of stock, are loaded on the STT at the FPS to which the family is connected. The beneficiary goes to the FPS, enters his card number in the terminal, which displays his entitlement and the quota available for the month. The FPS dealer then enters the required quantity into the terminal, the beneficiary places his finger on the machine authorizing the transaction, which is thereafter completed. One crucial feature of the Karnataka Model is that the STT also provides a system of ‘voice over’ i.e. when the FPS dealer enters the quantity in the machine, a voice message is automatically generated, stating the quantity thereby making verification possible even for an illiterate person.

3.1.7 Kerala

A computerisation project namely Target Efficient Transparent Rationing and Allocation (TETRA) for PDS is being implemented. The TETRA application comprises of modules for Ration Card management and food grain allocation and lifting.

3.1.8 Madhya Pradesh

Madhya Pradesh has developed and implemented a web based FPS allocation and offtake monitoring software. The data is assimilated from various FPS and entered at the district level. The district wise FPS allocation and off take is being updated on monthly basis. The beneficiary database is being digitized and enrolment into Aadhaar is closely linked to the database. Bar coded coupons are proposed to be distributed to the beneficiaries, who will use them to avail of their entitlements.

3.1.9 Tamil Nadu

In Tamil Nadu, allotment of essential commodities to FPS is done through an online system since December 2008. Allotment details are put on a website for public scrutiny⁶. The online allotment system is being used by all Taluk Supply Officers. Data from this portal is made available to beneficiaries through SMS. The closing balances are updated in the database through an SMS sent by FPS owners on a daily basis. All Ration Card data has been digitized and ration cards are being issued through the online application software at district level. Online billing machines have also been installed in about 1597 shops/kerosene bunks in the State. All FPSs will get electronic billing machines in a phased manner. Vehicles carrying TPDS food grains are fitted with Global Positioning System (GPS) for monitoring movement of foodgrains from FCI to Tamil Nadu Civil Supplies Corporation (TNCSC) godowns to ensure that grains reach the TNCSC godowns without diversion or pilferage on the way. Movement of commodities from TNCSC godowns to FPSs is tracked through mobile phones carried by a movement assistant in border districts of Thiruvallur and Krishnagiri districts. Four FPSs in Chennai city are also

⁶ <http://www.consumer.tn.gov.in>

enabled with closed circuit TV monitoring on a trial basis. An online application has been made available to consumers to register their complaints through a website.

The Ration Card application is a workflow based application, which runs at the Taluk supply office for creation and modification of cards. It has been implemented on a pilot basis in the north district of Chennai, which consists of seven zones. The printing of the card is done at the Commissioner's Office and issuance of new Ration Cards is done centrally. The cards carry a hologram and are laminated.

3.2 Best practices from States using IT in PDS

A summary of the best practices in TPDS implementation as reported by some States is as follows:

1. Creation of central beneficiary database – Chhattisgarh, Gujarat, Tamil Nadu, etc.
2. Cleaning up of databases through use of biometrics – Andhra Pradesh, Madhya Pradesh, etc.
3. Maintenance of Ration Card database using web based application software – Chhattisgarh, Gujarat, Tamil Nadu, etc
4. Issuance of TPDS commodities through:
 - a. Bar-coded Ration card – Chhattisgarh, Gujarat, etc.
 - b. Smart Card based ration cards – Andhra Pradesh, Chandigarh, Haryana, Orissa, etc.
 - c. Food Coupons – Bihar, Gujarat, Madhya Pradesh, Orissa, etc.
5. Online biometric verification before transaction – Gujarat.
6. Automated allocation every month using web-based application– Chhattisgarh, Tamil Nadu, Gujarat etc.
7. Generation of delivery order, truck challans, receipts and movement of commodities between Distribution Centers are being carried out through an application software – Chhattisgarh.
8. Automated assessment of transportation requirements and optimum utilization of trucks – Chhattisgarh.
9. Use of GPS for tracking movement of trucks – Tamil Nadu.
10. Availability of PDS related information on website such as list of Ration Card holders, FPS list, allocation, month-wise lifting and sales by FPS etc. – Chhattisgarh, Tamil Nadu.
11. SMS alerts sent to registered beneficiaries / citizens, vigilance committees for a designated FPS whenever PDS commodities are dispatched from a godown – Chhattisgarh, etc.

12. Grievance redressal system and availability of information regarding F&CS department through toll-free numbers, website – Chhattisgarh, Tamil Nadu, etc.

3.3 Learnings from computerization efforts in states

After various deliberations and discussions, the Task Force observed the following:

1. There is wide variance between states in terms of the extent of computerization undertaken in PDS. Each state has approached computerisation in a different way and has achieved different degrees of success based on a variety of factors;
2. Even in states that have undertaken computerization efforts, wide variation in their strategy, focus and intent exists. Many efforts have been piecemeal and on a pilot basis and their scalability is yet to be tested;
3. A few states have computerized the supply chain (from Godown to Fair Price Shop) while others have used technology to address last mile delivery issues (delivery to the PDS beneficiary). Hence both upstream and downstream computerization efforts in the PDS chain have been undertaken;
4. NIC has played a major role in computerization of PDS efforts in various states. They are in the process of combining their software developed for various states into a common software platform for PDS;
5. There is a need to make a comprehensive “As-Is” study in all the States to access the level of computerization across the country in order to have a complete view of the extent of leverage of technology in the PDS delivery mechanism;
6. An IT strategy is much more than just developing common software. It requires an institutional mechanism to undertake the complex task of conceptualizing, developing and maintaining the IT systems on a continuous basis.

4. Need for a National Information Utility

Effective computerization of PDS is a mammoth task, and needs to achieve multiple objectives simultaneously:

1. **Scale:** The IT solution should be capable of reaching the majority of Indian households through 4.62 lakh outlets. This requires scalable technology architecture in the backend and frontend automation through standardized devices, standard interfaces, and a standardized resident experience;
2. **Speed:** The importance of the social objective demands a country-wide rollout in a few years;
3. **Cost-effectiveness:** Investments in technology, operations and processes should allow for maximum reuse across multiple installations. Economies of scale can only be achieved through standardization;
4. **Quality:** The resident should have a pleasant and convenient experience at the FPS;
5. **Collapse the experience curve:** There should be a process of continuous improvement and sharing of best practices across states;
6. **Respect the federal structure:** The benefits of a common platform should fully respect the constitutional autonomy of states;
7. **Neutral policy rules:** The software platform needs to work equally well for universal or targeted beneficiaries, different eligibility rules for selecting beneficiaries, states providing additional subsidies over and above those provided by Government of India, different subsidized prices, different products through the PDS, giving the resident the option of receiving direct cash transfers, choice of tokens, etc. Such an approach decouples the development of the software platform from policy formulation and administration, which also makes it possible to carry out both activities simultaneously;
8. **Asynchronous rollout:** Any state should be able to adopt this solution at any time, choose any modules and extend the capability of the infrastructure on its own;
9. **Ecosystem:** A well-designed ecosystem along with standard interfaces between stakeholders (through MoUs, SLAs, and agreements) and technology components (through software interfaces) will drive speed, lower costs, lead to innovation and allow external stakeholders to build further applications and data analytics on top of the basic platform; and
10. **Empowerment:** For the system to be successful, the resident should be empowered through choice in using multiple locations for Ration Card registration, choice of using any FPS, real-time information, self-service wherever possible, and responsive grievance handling.

In order to achieve the objectives listed above, several demands are placed upon the software architecture:

1. **Design for large scale:** Every software component needs to scale to large volumes to support millions of transactions and billions of records; it should scale up (higher performance from better hardware), as well as scale out (higher performance by adding more instances of the same hardware);
2. **No vendor lock-in:** Use of open standards to ensure interoperability, which allows multiple vendors to supply systems/software/hardware;
3. **Flexibility:** The software must have sufficient flexibility to address issues of the federal structure as well as different business rules across states;
4. **Security:** Data architecture should be such that personally identifiable data is anonymized, and the system is designed for end-to-end security;
5. **Fault-tolerant:** Every component needs to be designed for fault tolerance to guard against disruption in operations and data loss. A disaster recovery centre should mirror the entire system; and
6. **Constant tuning:** Constant tuning of various subsystems in production is required to attain optimal performance.

Given the multiple objectives, and challenges in design of the solution architecture, the Task Force feels that an institutional mechanism is necessary to achieve effective computerization of PDS.

The Supreme Court⁷ had also observed that as the process of end to end computerization is expected to be a sizable exercise, to complete it in a mission mode, a **separate and dedicated institutional mechanism** is to be incorporated to look after the progress of computerization of PDS.

4.1 Recommendations of the TAGUP

In his 2010-11 budget speech, the Finance Minister mentioned the creation of a Technology Advisory Group for Unique Projects (TAGUP)⁸ to look into various technological and systemic issues in the implementation of complex IT projects in Government. As noted in the 2011-12 budget speech, the report of the TAGUP was accepted by the Finance Minister.

The TAGUP recommended that a class of institutions called National Information Utilities (NIUs) may be put in place to handle all aspects of IT systems for mission critical complex projects of Government. The Group noted that projects that can benefit from an NIU structure are those that span multiple levels of Governments, multiple departments, multiple stakeholders and a complex inter-connected eco-system.

⁷ Order in People's Union for Civil Liberties v. Union of India and Ors, W.P.No.196/2001 dated 14th September, 2011

⁸ http://finmin.nic.in/reports/TAGUP_Report.pdf

4.2 PDS Network – a National Information Utility for PDS

PDS is one of the largest distribution systems in the world. Even though it only distributes a relatively small number of items, the scale and size of its operations are unmatched. Due to its role in providing sustenance, it is a mission-critical application.

Given the complexity of execution, the NIU institutional framework proposed in the TAGUP report can help achieve the objectives outlined above for IT in PDS. This Task Force recommends that a dedicated NIU – PDS Network (PDSN) – be set up for to implement and operate the IT infrastructure for PDS. The broad area of operations that the PDSN could address, include:

1. Designing a complex highly scalable software system for PDS operations;
2. Tracking the movement of goods;
3. Beneficiary registration and facilitation of Ration Card issuance;
4. Entitlement management through a token-agnostic architecture;
5. Handling direct subsidy transfer payments into Aadhaar-enabled bank accounts; and
6. Grievance handling through a contact centre;
7. Business intelligence, analytics, and fraud management; and
8. Providing training to stakeholders.

PDSN can be responsible for all IT operations related to PDS such as software development, specification of data, device, and various technology standards, data centre operations, contact centre operations, analytics and business intelligence, transparency portal, etc. Specifically, PDSN will not have any role to play in policy formulation, eligibility of beneficiaries, and other business issues; these are solely the domain of the implementing Government Department. While the IT aspects of the network will be managed by the NIU, strategic control will be exercised at all times by the Government.

The importance of electronic delivery of services has already been recognized by Government of India:

1. The IT Act, 2000⁹ paves the way for electronic documents and authentication, allowing for electronic beneficiary registration for ration cards;
2. The Electronic Services Delivery Bill¹⁰ paves the way for electronic provision of services, which empowers beneficiaries visiting FPS shops to query their entitlement and usage;

⁹ <http://www.mit.gov.in/content/information-technology-act>

¹⁰ <http://www.mit.gov.in/content/draft-electronic-service-delivery-bill-1>

3. The Mobile Governance Framework¹¹ sets up a framework for rolling out mobile based delivery of public services, which helps in closing the feedback loop between the Government and the beneficiary directly, without intermediaries; and
4. Some State Governments have already passed the Right to Service Bill. It is only through automation and electronic service delivery that State Governments can monitor the quality of service offered by various Departments to beneficiaries.

4.3 Mission Team at the MoCAFPD and MoPNG

The Report of the TAGUP (Section 2.3), while making a recommendation for creating NIUs, also noted the importance of a Mission Team within the implementing Ministry. The Mission Team is a dedicated team¹² that owns project implementation, helps incubate the NIU by drafting relevant policies, building an initial financial model, helping put the initial team in place, etc. Thus, along with PDSN, a Mission Team within Government (MoCAFPD and MoPNG) with a dedicated Mission Leader should be put in place. MoCAFPD should be the implementing Ministry for the creation of the Mission team as well as the PDSN, with support and involvement of MoPNG.

The Department of IT (DIT) has also published Guidelines for setting up Dedicated Project Team. It notes:

“In order to manage the complexities involved in the implementation of the Mission Mode Projects, expert resources in the areas of Technology, Project Management, Change Management, Cyber Security and Legal need to be available on full time basis at the individual Departments/ Line Ministries of the Government of India.”

These guidelines provide details on roles and responsibilities of the Mission Leader and various members of the Mission Team. It also notes the importance of recruiting market professionals, and the role of Special Purpose Vehicles (SPVs) in implementation of complex e-governance projects.

It is necessary that strategic control over the project rests with the Government, both at the Centre and the States. Strategic control should be focused on the vision and outcomes of the project. It can be achieved by having a strong dedicated team within the Ministry inter alia to drive policies, evolve suitable governance structure and working relationship with the NIU and conduct independent audits. The NIU should have the independence to manage its day-to-day affairs. Further, the State Governments can ensure strategic control by enforcing SLAs, outcome based pricing and independent audits in their relationship with the NIU.

4.4 Legal structure

An NIU may be incorporated as one of the following:

- (a) **Company** under the Companies Act, 1956;

¹¹ http://www.mit.gov.in/sites/upload_files/dit/files/Draft_Consultation_Paper_on_Mobile_Governance_28311.pdf

¹² The Mission team, the TAGUP recommended, should be headed by a Joint Secretary or Additional Secretary level officer dedicated to the project.

- (b) **Society** under the Societies Registration Act, 1860;
- (c) **Firm** under the Indian Partnership Act 1932;
- (d) **Limited Liability Partnership** under the Limited Liability Partnership Act, 2008; or
- (e) **Trust** under the Indian Trusts Act, 1882

The TAGUP recommended a company structure for NIUs, which provides autonomy in operations, along with a strong legal framework for corporate governance. The TAGUP also recommended an ownership structure that allows for strategic control by Government, but without getting involved in day-to-day operations, which are instead codified in the SLAs, and a transaction-oriented pay-per-use pricing model. The MoCAFPD along with other partners will create the PDSN, to which States can subscribe. The PDSN will be anchored in the MoCAFPD. The MoPNG will have to actively engage in this endeavour.

The Task Force recommends that PDSN be set up as a Section 25 (non-profit) non-Government Company¹³, in line with the recommendations of the TAGUP.

4.5 Organization Structure

PDSN will have the operational flexibility to design a suitable solution architecture within the overall policies laid down by Government, procure hardware, software, and services in a manner it sees fit to ensure that it meets the SLAs. However, the operational success of PDSN will ultimately depend on the quality of its human resources, its ability to attract and retain talent, and independence in managing day-to-day operations.

The Task Force recommends the following organizational structure based on recommendations made in the case of GSTN:

1. The Governing Board will be appointed by the shareholders of PDSN, which will include Government of India (MoCAFPD and MoPNG) and other partners. The Chairman of the Board should be appointed by Government of India. State Government representatives could also be on the Board on a rotational basis. The Board should also include independent directors, who are persons of eminence.
2. The CEO of PDSN would require knowledge not just of agriculture, distribution, and retail, but also of information technology including data management and security. The CEO will need to be fully committed to the long-term success of PDSN. The post would be open for candidates from the Government as well as the private sector. The CEO would be selected through an open selection process by the Board. The detailed job specifications of the CEO would have to be worked out by the Board.

¹³ A similar structure (Section 25 non-Government Company) has been given an in-principle approval by Government for the Goods and Services Tax Network (GSTN), which will provide IT and operations services to the Central Board of Excise and Customs and State Governments.

3. The PDSN could adopt HR and salary practices of NSDL since that is a proven model.

4.6 Funding and revenue

The funding for the initial set up and operations and the revenue model for self-sustainability are critical for the startup and operational phase of PDSN. The following options may be explored by PDSN to raise funds to meet its initial set up and operations costs:

1. Issuing shares of the company, where NIU is incorporated as a company;
2. Raising loans from Government;
3. Availing grants from the Government;
4. Raising loans from private sector; and/or
5. Availing advance transaction charges from the service receivers and setting them off against future payments

As mentioned earlier, in the long run, PDSN should have a self-financing and independent financial model, to the extent possible, in order to ensure independence in terms of day-to-day management. Accordingly, PDSN should identify a workable model for revenue streams for the services delivered by PDSN.

4.7 Contractual obligations and performance evaluation

PDSN would be established to render public services to various stakeholders including Government and beneficiaries. Further, it would operate in a monopolistic environment. Once incorporated, PDSN will be an independent legal entity with rights and obligations distinct from its originators and would act in its individual capacity. It is therefore imperative that appropriate mechanism be developed to ensure that once incorporated, PDSN accomplishes the purpose of its incorporation. The framework for periodic performance evaluation and external professional audit of operations is necessary to ensure high standards of delivery to be developed.

For this purpose, it is necessary that a well-defined framework within which PDSN would function is designed. The framework should include in unambiguous terms the type and quality of services, the manner of provision of such services, the standards based on which these services would be measured, and the timelines for delivery of such services that would be applicable on PDSN. It must be ensured that PDSN is obliged through legal and formal contractual arrangements with the State Governments like Memorandum of Understandings, Agreements and Service Level Agreements to honor this framework. In addition, the contract between the State Governments and PDSN should also factor in clear terms the obligations of both the Government and PDSN and the financial arrangement between the Government and PDSN.

4.8 Incubation

The incubation phase is essential to make early progress, while the Government approves the creation of PDSN, funding is put in place, a team is hired, and the organization is incorporated. Incubation includes:

1. An “As-is” study of the existing status of computerization of PDS in all States;
2. Defining the ‘To-Be’ scenario and carry out gap analysis
3. Developing requisite IT requirements and solution architecture;
4. Preparing necessary RFPs to procure hardware, software, and services;
5. Starting the recruitment process for the top management of PDSN; and
6. Transferring all intellectual property and assets eventually to PDSN when it is formed.

Incubation should be done within the MoCAFPD with active participation from MoPNG. The Incubating Entity will consist of the Mission Team (appointed by the MoCAFPD and MoPNG) along with engaging of a professional consultancy¹⁴ as per established government procedures, which will help prepare a detailed roadmap for computerization of PDS.

The DIT has published NeGP Guidelines for Operational Model for implementation of Mission Mode Projects by the Line Ministries/State Departments. The scope of these is defined as follows, and will help structure the incubation phase:

“Various activity stages incorporated in these Guidelines describe the process primarily for the State level MMPs starting from the eGov Opportunity identification, Programme Initiation, Project Conceptualization at the Central Line Ministry, till their Implementation and roll-out at the State level. Major roles, responsibilities and deliverables of various stakeholders and agencies along with options at different stages are also described. The main focus of these Guidelines is primarily on the State MMPs but these are also applicable to the Central/Integrated MMPs.”

The incubation would provide a ready platform to start delivering the requisite services from the very inception of its incorporation and would also mitigate the risk of initial start-up hiccups. The inputs received from the Incubating Entity may also be used to improve upon the financial, operational and administrative structure of PDSN. The incubation would facilitate the necessary transition from concept to reality. It would enable all the stakeholders to come on board the project and address the challenges in integration of the eco-system at an early stage. The incubation phase will also foster a coalition of change early on in the life cycle of a project. In the case of the Goods and Service Tax Network (GSTN), a similar model of incubation is being followed wherein the Ministry of Finance has approved the incubation of the GSTN in the National Securities Depository Limited (NSDL).

¹⁴ The UIDAI has empanelled consultants and solution providers. A consulting firm may be selected simply by issuing a Request for Quotation, or alternatively, a new RFP could be floated in order to select a consulting firm.
http://uidai.gov.in/images/FrontPageUpdates/final_empanelment_list_30_may_2011.pdf

The mandate, roles and responsibilities of the Incubating Entity should be drawn carefully and with clarity. It should include aspects such as financials, responsibilities of the Government and the Incubating Entity, acquisition of infrastructure, development of application software, ownership of source code, spin-off to the proposed NIU, and the process of transfer of assets (both tangible and intangible). Further, a well-articulated and tested service delivery plan needs to be in place prior to commencement of services by the PDSN. The roll out of services process may be step-wise and gradual so that Government, stake holders, and beneficiaries have sufficient time to get acquainted with the evolving delivery mechanism. It should be ensured that the infrastructure for the Incubating Entity should be based on latest technology and ring fenced, so that whenever the spin-off to the PDSN takes place, the infrastructure of the Incubating Entity stands smoothly transferred.

4.9 Independence of PDSN and strategic control within Government

4.9.1 Independence of PDSN management

1. PDSN should be able to work with flexibility on its day-to-day functioning
2. The Management should be empowered to take quick and efficient business decisions pertaining to attracting and retaining talent, procurement, rapid response to business exigencies, adopting new technologies etc.
3. The independence of the management is linked to the financial independence of PDSN. Therefore, PDSN should be able to get funding independently and have a self-sustaining financial model
4. The entity should be empowered to commit and sign appropriate SLAs with customers and vendors.

4.9.2 Strategic Control within Government

The DIT has published Guidelines for Strategic Control in Outsourced Projects. It defines strategic control as follows:

“Strategic Control enables Line Ministries/Departments to have control over the outcomes, make required changes and have the capability of exit management. Additionally it also ensures that the Government has complete control over the Strategic Assets like software application, databases and core infrastructure.”

In order for Government to retain strategic control, these guidelines describe putting an appropriate governance structure in place, using well-defined software development processes, and ownership of strategic assets such as intellectual capital, documentation, software, data, and infrastructure.

The NIU structure also includes the following additional measures for Government to retain strategic control:

1. The Central Government holds a significant share of PDSN;
2. The process by which key appointments and removals are managed;
3. Process of setting and re-aligning the goals of PDSN, strategies for attaining these goals and reviewing performance;
4. Decision allowing PDSN to take up consultancy, implementation or operations projects beyond PDS enablement related to service delivery for Government

The Task Force recommends that while implementing the recommendations of the Task Force the MoCAFPD must further look at aligning the various guidelines related to Mission Mode Projects and the National e-Governance Plan.

5. A common solution architecture for all States

Technology, while not a panacea for solving the problems of PDS, is crucial in improving the efficiency of PDS and bringing it to the levels of optimum productivity. Targeting, as is done today, requires accurate identification of beneficiaries, accountability and transparency in the movement of goods, and full reconciliation. Some States such as Chhattisgarh are at an advanced stage, and have a software platform that is already in use. Other States such as Gujarat are at the stage of advanced pilots. Most States are yet to start implementing comprehensive technology solutions in PDS. Given the importance of States having the flexibility in choosing their partners and implementation, and to ensure that the new design does not create roadblocks for those who are already on the path of computerization, partnering with PDSN will be strictly voluntary for States.

PDS operates roughly in the same way across all States, with minor differences in policies, prices, and administration. The Core subsidy Management System has been detailed in the Interim Report of the Task Force on Direct Transfer of Subsidies on Kerosene, LPG, and Fertiliser (Chapter 4)¹⁵. The solution for PDS direct cash transfer of subsidy also will be fully in line with the CSMS detailed. As a result, a common software platform for PDS can be developed for all States, with the flexibility to configure policies, prices, and administrative structures. The States can further extend the basic software platform with additional capabilities, as per their own requirements. A common platform managed by a professionally run PDSN, along with a systematic onboarding of States can help improve PDS quickly, while simultaneously ensuring that learnings across different States are shared efficiently. However it should be voluntary for States to adopt the common software platform. A State can choose to be a part of the network if it sees a value in being part of the initiative.

Some of the salient features of the common software platform are as follows. They are similar to the recommendations of the Interim report of the Task Force on Direct Transfer of Subsidies (Chapters 3 and 4):

1. **Configurable business rules:** Every State Government can specify its own business rules and configure the software to local requirements. States can add more products, provide additional subsidies, set prices, and formulate policies to suit local conditions.
2. **Token-agnostic architecture:** State Governments can decide on the form factor of the ration card and entitlement token. These may be a smart card, a paper voucher, an electronic food coupon, biometric authentication, an SMS sent to a mobile phone, or a combination of these. The tokens are only manifestations of ensuring that the beneficiary receives his/her entitlement, supply chain is updated and information visibility is achieved. Hence, the form of the token can be varied while achieving the above objectives. Over time, with adequate Aadhaar coverage, the tokens could be Aadhaar linked. Only one type of physical token will be used in one State for the convenience of the stakeholders in supply chain and for customers.

¹⁵ http://finmin.nic.in/reports/Interim_report_Task_Force_DTS.pdf

3. **Entitlement choice:** The software will make it possible for the State Government to decide to offer choice to the beneficiaries in receiving their entitlements in kind (food/kerosene) or cash.
4. **Location choice:** The software will make it possible for State Governments to provide a choice of the location from which the beneficiary can get his/her entitlement from. This will ensure that beneficiaries are empowered by the choice and are not limited to a particular FPS or location.
5. **Incentive compatible:** The commission rates for the FPS owner should be set so that he can earn adequate returns on investment, which will minimize his incentive for diversion. The rate structure should be flexible, to allow for variances in cost of living across different geographies. Similarly, incentives should be set up for all stakeholders so that they benefit by participating in the PDS, rather than benefiting from diversion.

5.1 Software architecture

The common software platform for PDS will not replace any existing systems, but rather complements them, by extending their functionality and integrating various modules. In order to implement an efficient and productive PDS, it will essentially consist of two separate systems, which will be integrated when both are ready:

1. Supply Chain Management System (SCM-PDS)
 - a) Procurement module (to integrate with systems of the FCI)
 - b) Product movement module (to integrate with ERP systems of stakeholders)
 - c) Warehouse management module (to integrate with warehouse management systems)
 - d) FPS/wholesaler/partner entity registration module
 - e) Global inventory management module (to track stocks with wholesalers and FPS)
 - f) Pricing module
 - g) Invoicing module
 - h) Offtake and replenishment module
2. Core Subsidy Management System (CSMS-PDS)
 - a) A Business Rules Engine for customizing State specific policies
 - b) Beneficiary and family registration module (Ration card - Aadhaar integration)
 - c) Direct subsidy transfer module (Integration with nodal bank and payments gateway)
 - d) Transparency module (Data.gov.in integration)

- e) Contact Centre module (integration with Customer Relationship Management systems)
- f) Training, education, and outreach module
- g) MIS Module
- h) Module to integrate with other subsidy management and e-governance systems
- i) Analytics and Fraud Module

In the case of kerosene, the OMCs have invested in technology and have implemented some of these modules. Wherever possible, existing systems should be integrated rather than developing them afresh.

5.2 Phased implementation approach

As discussed in Chapter 3, different states are at different levels of preparedness for migration to a holistic common software platform. In order to utilize existing investments and align with the readiness of various stakeholders, a phased implementation approach is necessary. PDSN will develop software in two phases. Phase I will focus on information visibility through the Supply Chain Management System (SCM-PDS), whereas the full Core Subsidy Management System (CSMS-PDS) will be developed and deployed in Phase II. While the two phases are being identified distinctly, there may be some overlap in the processes and implementation.

The Interim Report of the Task Force on Direct Transfer of Subsidies (Chapter 8) recommended a phased approach for the direct transfer of subsidy for kerosene:

1. **Phase I:** Transfer of subsidy from Government of India to State Governments Oil Marketing Companies (OMCs) will supply kerosene to the State Governments at market price. Government of India will bear the subsidy on kerosene and transfer the differential between the market price and the customer price as set by it, to the State Governments.
2. **Phase II:** Direct Subsidy Transfer by State Governments to Beneficiaries. The State Governments will ensure that the subsidy is directly transferred to the beneficiaries.

These phases will be aligned with the phased approach being suggested for PDSN.

5.2.1 Phase I (Supply Chain Management System)

In Phase I, the focus will be on information visibility and transparency. As Ration Card is the document of eligibility for food and kerosene distributed through the PDS, the computerisation of Ration card issuance, along with capture of the beneficiary and family details is essential. Other activities that will be taken up in this phase are the transparency portal and the contact centre.

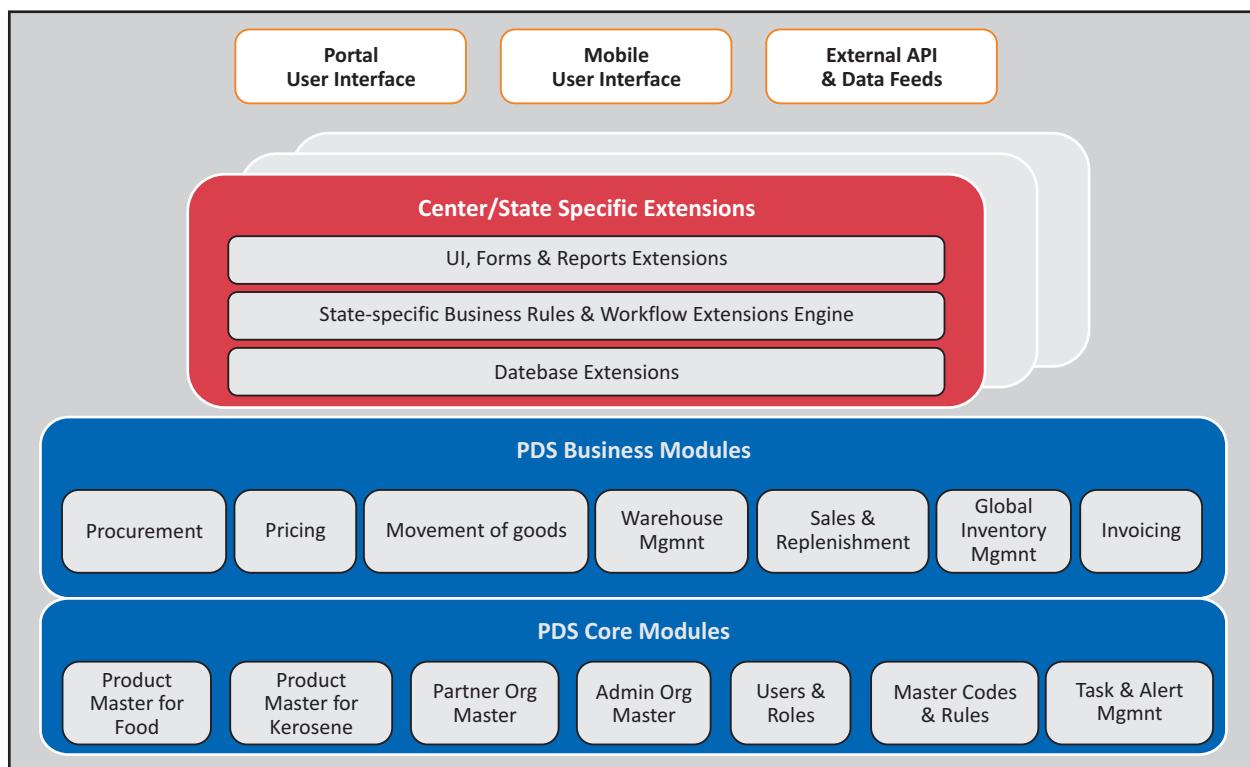


Figure 1: Supply Chain Management System (SCM-PDS)

States that have already embarked on computerisation may start out only with information visibility capabilities of PDSN. However, States that are starting afresh can incorporate Aadhaar linkage processes into their workflows of Ration Card registration and distribution in anticipation of Phase II. Aadhaar enrolment of PDS beneficiaries will be a simultaneous activity in Phase I. Enrolment into Aadhaar and linking it to the Ration Card will ensure de-duplication of the PDS beneficiary database as well as address some of the exclusion and inclusion errors in the PDS system. The role of Aadhaar is discussed further in Chapter 7.

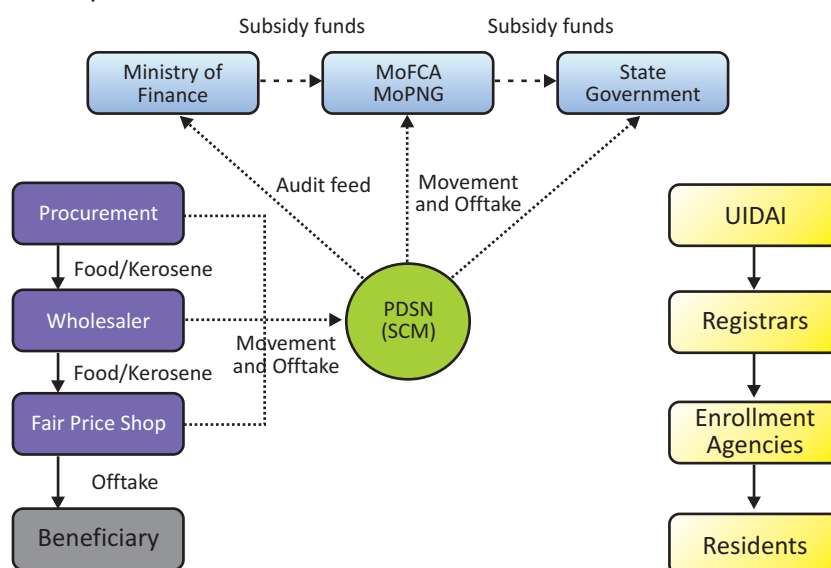


Figure 2: Phase 1: Information visibility through the Supply Chain Management System (SCM-PDS), Transparency portal, Contact Centre, etc. Aadhaar enrollments will proceed simultaneously.

5.2.2 Phase II (Core Subsidy Management System)

Aadhaar integration will be implemented in Phase II, when sufficient Aadhaar coverage has been achieved. PDSN will integrate the State Government's choice of token for benefits delivery (vouchers, smartcards, electronic coupons etc.). PDSN will also fully implement all remaining modules of the Core Subsidy Management System, which include integration with other external:

1. Expenditure Information Network
2. Payments networks
3. CSMS implementations of other ministries
4. Aadhaar-based solutions for Ration Card registration, identification, authentication, and payments
5. Other e-governance systems that are developed over time.

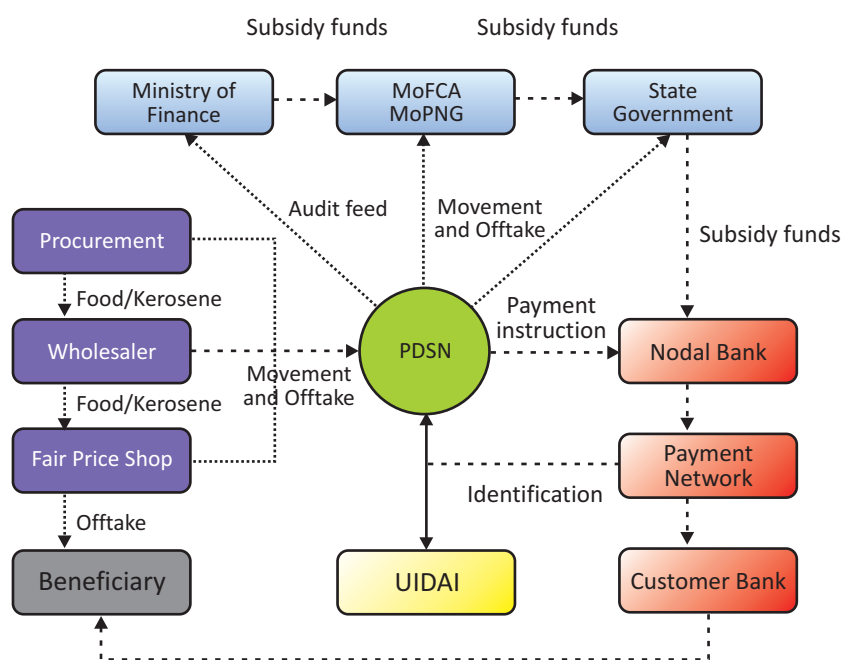


Figure 3: Phase II: Common Software Platform for PDS - Supply chain Management System (SCM) and Core Subsidy Management System.

Integration with the above systems in Phase II will also make it possible for PDSN to offer various subsidy management models, as described in the Interim Report of the Task Force on Direct Transfer of Subsidies (Chapter 3):

1. Aadhaar linkage of tokens (vouchers, smartcards, electronic coupons etc.);
2. Full portability of benefits, allowing beneficiaries to visit any FPS;
3. Provide States with a choice between various subsidy models for food, which include beneficiary authentication at the time of delivery:
 - a. Product movement and sale at subsidized price, through the use of technology for full reconciliation of commodities in the supply chain;
 - b. Product movement and sale at market price, with reimbursement of subsidy directly to the beneficiary, to reduce the incentive for pilferage due to two prices of the same commodity;
 - c. Product movement and sale at market price, with reimbursement of subsidy directly to the retailer, which reduces incentives for diversion, while taking into account the cash liquidity constraints of poor beneficiaries;
 - d. A conditional cash transfer to the resident, where the cash can only be used to purchase food, and is enforced with technology; and
 - e. Provide choice to beneficiaries to receive a direct cash transfer into their Aadhaar-enabled bank account instead of food, which allows beneficiaries to exercise their preferences over commodities, location, etc.; and
4. Direct transfer of subsidy to Aadhaar-enabled bank accounts of beneficiaries for kerosene.

In all these subsidy management models, irrespective of which one is chosen by the State, beneficiaries will be able to exercise the following choices:

1. choice of location;
2. choice of the mix of commodities;
3. choice to purchase commodities in convenient quantities, and in any number of instalments; and
4. choice to purchase commodities or receive a direct transfer of subsidy.

The PDS can thus be made more efficient through appropriate usage of technology and incentives. The policy choice of opting for one or many of these subsidy models would ultimately be that of the government. The PDSN would only provide the mechanism on the basis of which these transfers can be made.

The Hon'ble Supreme Court¹⁶ also visualized computerization in two broad phases:

“... End to end computerization of PDS may be considered in two parts and following prioritisation of the Implementation Strategy may be followed:

Component I:- Diversions, leakages, delays in allocation and transportation, inappropriate distribution of foodgrains to fair price shops go unchecked because of lack of visibility of this information in the public domain. Computerization of complete supply chain management up to the shop level and availability of this information on a Transparency Portal in public domain is to be accorded the highest priority. The portal should have different dashboards catering to the information needs of all the stakeholders.

Component II:- Electronic authentication of delivery and payments at the fair price shop level. In order to ensure that each card holder is getting his due entitlement computerization has to reach literally every doorstep and this could take long. Moreover several States have already started implementing smart cards, food coupons etc. which have not been entirely successful. Reengineering these legacy systems and replacing it with online Aadhaar authentication at the time of foodgrain delivery will take time. This is therefore proposed as component II.”

Highlighting the importance of Aadhaar enrolment the Court further observed:

“As far as possible, state governments should be directed to link the process of computerization of Component-2 with AADHAR Registration. This will help in streamlining the process of biometric collection as well as authentication. States/UTs may be encouraged to include the PDS related KYR+ field in the data collection exercise being undertaken by various Registrars across the country as part of the UID (Aadhar) enrolment.”




























	Current System	Phase I	Phase II
Beneficiary Identification, Inclusion/Exclusion errors			
Addressing diversion during movement, lifting etc.			
Confirmation of delivery in last mile			
Tracking movement of goods, inefficient inventory management			
Accountability and monitoring			
Grievance redressal through multiple channels			
Portability and demand-driven			
Flexible entitlement			
FPS misbehavior-under-weighing, extra charges, poor quality, etc.			

Table 1: Benefits in each phase of common software platform for PDS

16 People's Union for Civil Liberties v. Union of India and Ors, W.P.No.196/2001.

5.3 PDSN Operations

Along with the design of the common software platform, PDSN will also manage day-to-day operations for all member States.

5.3.1 Data Centre Operations

The Data Centre will house all the technology necessary for operations. The best practices in Data Centre management and operations will be followed. Multiple Data Centres will be set up in different geographies for fault tolerance and redundancy.

5.3.2 Contact Centre operations

The PDSN will manage Contact Centre operations for purposes of distributing information (through SMS/Email/Phone etc.), and reporting of grievances. It will also provide a helpdesk to the State Governments for purposes of troubleshooting day-to-day operations.

5.3.3 A Network Operations Centre (NOC)

The NOC will manage all operations, such as tracking the procurement of food and kerosene, tracking the movement of goods, inventories at Fair Price Shops, activation/de-activation of Fair Price Shops, predicting demand and shortfalls in supply, among other things.

5.3.4 Analytics and fraud management

Analytics is the structured process of converting data to insights for aiding decision making. Analytics is a soft infrastructure that aids other functions in improving decision making by delivering the right data and insights at the right time in an easy to comprehend manner. With the explosion of data and technology, analytics is increasingly being recognized as an important support function in organizations. The huge amount of meta-data that the common software platform generates can be mined to provide the entire ecosystem insights to improve operational efficiency. Data can also provide an integrated view across the ecosystem, by serving as the common language for processes across the interconnected PDSN to track against the same goals.

6. Onboarding of States

As States transition to an IT enabled PDS, systematic onboarding is essential for a smooth transition¹⁷. The Nodal Department in the State Government will take ownership for re-engineering the processes and putting in place a robust change management and roll-out plan. PDSN will leverage a partner-based ecosystem, which will enable quick rollout and scaling up. Until the PDSN is created, an Incubating Entity will undertake these tasks and the PDSN will take it over once established.

6.1 MoUs between Incubating Entity/PDSN and various stakeholders

When a State Government decides to partner with the Incubating Entity/PDSN, a formal arrangement needs to be in place to structure the relationship. The Incubating Entity/PDSN should sign a Memorandum of Understanding (MoU) with the participating State Governments. The MoU formalizes the partnership between the two institutions, and defines the roles and responsibilities of each partner. A draft template MoU between Incubating Entity/PDSN and State Governments is included in Annexure II.

6.2 Onboarding of State Governments

Incubating Entity/PDSN should follow the guiding principle of asynchronous and unbundled services, so that States may pick and choose from the options of solution modules, at any point of time. In order to facilitate quick and efficient onboarding, Incubating Entity/PDSN will need to put processes, documents, and teams in place to guide State Governments.

6.2.1 Onboarding team

Incubating Entity/PDSN will need to set up an internal team comprising consultants, project managers, technical and domain specialists to support implementation and onboarding of States. It would also have subject matter experts for empanelment and onboarding of specific categories of execution agencies. A Joint Working Group (JWG) comprising of members of the onboarding team, which includes representatives of MoCAFPD and MoPNG, along with designated State Government officials (including NIC personnel in the State) should be formed. This JWG should be fully responsible for the onboarding process in every state. The State units of the NIC can be involved in implementation of the project at the State level.

6.2.2 Onboarding toolkit

The Incubating Entity/PDSN onboarding team should prepare a reference handbook for State Governments for an overview and quick understanding of the program / solution. A detailed onboarding toolkit should also be defined, which includes readiness checklists, process guidelines, implementation standards, etc.

¹⁷ A document that details the onboarding of registrars at UIDAI:
<http://uidai.gov.in/images/FrontPageUpdates/ROB/A3%20RG%20Registrar%20Onboarding%20Process%20-%20Ver%201.2.pdf>

6.2.3 Standardised content

Incubating Entity/PDSN should create standardised content that may be leveraged by State Governments and implementation partners. This will facilitate speedier adoption and execution of the program. Suggested areas are:

1. MoU template;
2. Training content for various stakeholders;
3. IEC content, formats, and usage guidelines;
4. Project plan and readiness checklists;
5. Governance framework such as Joint Working Groups; and
6. Change management plan comprising of a stakeholder analysis approach.

6.3 Empanelment of ecosystem partners

Incubating Entity/PDSN will create a scalable ecosystem of implementation partners to make it easy for States to computerize their PDS operations. They can facilitate the engagement of service providers by defining the roles and responsibilities of these agencies, adoption of standard processes, technology standards, and engagement models. They can empanel service providers across various categories to meet the needs of the States as deemed necessary on an ongoing basis. Incubating Entity/PDSN can also create appropriate guidelines for States to hire and engage these service providers by providing templates for RFP/RFQ, scope of services, and a basic financial model, among other things. The States may then choose one of the empanelled service providers, or choose one on their own. The rest of this section describes the areas in which other service providers may need to be appointed by State Governments.

6.3.1 Solution consultants

Solution consultants will work with State Governments to define and execute the Incubating Entity/PDSN solution across the state. They will assist in onboarding, appointing of all other execution agencies and partners, and monitoring their performance. They will identify and define business requirements, business processes, and system integration requirements with existing systems of the State Government. The solution consultants will also advise on business process re-engineering for effective computerization, and change management procedures to facilitate a smooth transition.

6.3.2 Data digitization agencies

State Governments are in the process of creating Resident Data Hubs for purposes of service delivery. Existing cards, forms and physical information from a number of Government initiatives will need to be digitized, family details will need to be captured, and Aadhaar numbers will need to be seeded. Thus, local agencies will be appointed for this digitization work.

6.3.3 Software solution providers

State Governments have their own State Data Centres. With the creation of a Resident Data Hub, there will be a number of other electronic services offered by State Governments. Services provided by Incubating Entity/PDSN will need to be integrated with systems run by State Governments. Software solution providers will be appointed by State Governments to perform the integration of PDSN with the State Government's overall IT solution.

6.3.4 Training agencies

As PDS moves to electronic service delivery, various stakeholders such as Government officers at various levels, and FPS owners will need to be trained. Training agencies can be empanelled to impart well-defined training using packaged training material.

6.3.5 IEC (Information, Education, Communication) agencies

It is essential to inform and educate beneficiaries, and people at large about transition in PDS. Communication¹⁸ can be achieved through a variety of channels:

1. Broadcast and telecast: TV, radio, print, Internet
2. Information: News and publications
3. Outdoors: Posters, handouts, wall paintings, banners, hoarding
4. Entertainment: Cinema, sports, endorsements
5. Inter-personal: Audio, video, telecom

Communication helps raise awareness levels, educates beneficiaries on what to expect, and provides them with information on seeking grievance redressal. While creatives and national advertisement campaigns can be created centrally, local agencies need to be appointed for customizing the messaging in local language, while being sensitive to local contexts.

6.3.6 Monitoring and audit agencies

Independent audit agencies should be appointed to assess performance levels of the PDS. These agencies make random unannounced visits to various stakeholders and file a scorecard-style report of the visit. Such third party monitoring mechanisms are essential to monitor the service levels and continuously improve them.

6.4 Rollout

The implementation and rollout will follow a step-wise process. A suggested approach including high-level activities is outlined below.

¹⁸ UIDAI: Communicating to a Billion
http://uidai.gov.in/UID_PDF/Front_Page_Articles/Events/AADHAAR_PDF.pdf

6.4.1 Step I – Project initiation

1. Signing of MoU between Incubating Entity/PDSN and the State Government
2. Creation of Joint Working Group for the rollout

6.4.2 Step II – Pilot execution

1. Project initiation workshops for key stakeholders across the State
2. Identification of areas and Fair Price Shops for execution rollout during pilot
3. Solution definition and implementation (process, systems, data, etc.)
4. Execution Workshop for all stakeholders for pilot rollout
5. Training of FPS owners and other stakeholders
6. IEC for pilot rollout
7. Readiness assessment (Data, IT, Training, IEC, etc.)
8. Launch of pilot

6.4.3 Step III – State-wide rollout

1. Appointment of various empanelled agencies such as consultants, system integrators, data digitization agencies, training agencies, IEC agencies, and monitoring and audit agencies.
2. Learnings from the pilot should be incorporated in the state-wide rollout
3. Scale the solution state-wide
4. State-wide IEC and training campaign for identified stakeholders
5. Continuous monitoring and improvement

7. Role of Aadhaar

Aadhaar¹⁹ is a unique 12 digit identification number that is being issued to all residents of India. Some of the key features of Aadhaar are:

1. One Aadhaar = one beneficiary

Aadhaar is a unique number, and a resident can have only one number since it is linked to their individual biometrics. Using Aadhaar to identify beneficiaries in PDS databases will eliminate duplicate and fake beneficiaries from the rolls, and make identification for entitlements far more effective.

2. Fully inclusive enrollment process

Aadhaar is issued to people of all ages. UIDAI has appointed multiple registrars (State Governments, Banks, LIC, NSDL, etc.) for a scalable enrollment model. Residents can opt to enroll at any location operated by any registrar.

3. Biometric linked

Fingerprints and iris scans are captured during enrollment for purposes of de-duplication. Individual identities can also be verified against these collected biometrics at the time of service delivery.

4. Universal identification

Aadhaar is a universal number, and agencies and services can contact the UIDAI database from anywhere in the country to confirm a beneficiary's identity. The number thus gives individuals a universal, portable form of identification.

Aadhaar can be leveraged by PDS in a number of ways:

1. Ration card registration
2. Cutting down diversion and pilferage through elimination of fake beneficiaries
3. Providing authentication services
4. Aadhaar-linked payments

7.1 Ration Card registration

The Ration Card registration can be made easy and convenient for customers:

1. The resident who wants to apply for a Ration Card can go to any place, such as the Panchayat

¹⁹ http://uidai.gov.in/UID_PDF/Front_Page_Articles/Documents/Strategy_Overveiw-001.pdf

office, CSC, Post Office, or any approved location equipped with an Aadhaar enabled assisted service terminal.

2. The resident can also apply by self-service from his own mobile phone and authenticate himself/herself remotely.
3. The CSMS-PDS will maintain a database of all applicants and publish it on the Internet, with details such as how many days elapsed, what number are pending etc. Real-time analytics can be provided. Contact centre and self-service update status can be given.
4. The back-end software can allocate the request for Ration Card to a particular office based on well defined rules – so there is clear accountability.
5. Printing of Ration Card can be done centrally and delivered via Post or at Government offices locally.
6. In such a targeted system there could be a self-assessment form where the resident declares his/her eligibility and the Ration Card is automatically given to him/her, with a penalty for misstatement. A random sampling and audit would help in streamlining this, and catching offenders.

In light of the Right to Service Bill, this can be a great tool for State Governments to monitor the service levels on the ground, while offering simplicity and convenience to the beneficiaries.

7.2 Addressing diversion and pilferage

Aadhaar cannot address all diversion and pilferage that happens within the PDS. One common method for pilferage includes the creation of fake Ration Cards (which may be in the name of fictitious families, or ineligible families), and creating records that show consumption of food and kerosene by these fake families.

Once Aadhaar is used for Ration Card registration, it can help weed out such fake identities, and reduce the opportunities for fraud. Pilferage may still occur through coercion and denial of service, but these problems will be addressed by providing the resident choice for receiving their food and kerosene from multiple outlets.

7.3 Authentication services

Aadhaar will provide biometric and non-biometric authentication services. In cases such as kerosene subsidy, where electronic authentication of the beneficiary is necessary, Aadhaar based authentication solutions may be deployed.

The State Government will have a choice of doing one time verification of the identity, followed by its own authentication, or simply using Aadhaar's online services. The details will depend upon the solution requirements and availability of infrastructure.

7.4 Aadhaar-linked payments

The State Government can channel subsidies to Aadhaar-enabled bank accounts²⁰, and beneficiaries can access these accounts through Aadhaar authentication (or other banking channels made available by the bank). This will enable State Governments to directly transfer subsidy to the intended beneficiary using the Aadhaar Payments Bridge and the Aadhaar Enabled Payments System^{21, 22}. This solution has been detailed in the Interim Report of the Task Force on Direct Transfer of Subsidies (Section 4.2). It has specifically been recommended by the Task Force in the case of kerosene (Section 8).

20 Partnership of UIDAI and Banks for opening Aadhaar-enabled Bank Accounts:

http://uidai.gov.in/index.php?option=com_content&view=article&id=182&Itemid=173

21 From Exclusion to Inclusion with Micropayments:

http://uidai.gov.in/UID_PDF/Front_Page_Articles/Strategy/Exclusion_to_Inclusion_with_Micropayments.pdf

22 MicroATM standards for Aadhaar enabled payments system:

<http://uidai.gov.in/images/FrontPageUpdates/microatmstandardsv1.3.pdf>

8. Roles and Responsibility of various stakeholders

The implementation of the IT strategy for PDS involves roles and responsibilities of different stakeholders involved in the project. It would involve the following:

8.1 MoCAFPD, Government of India

1. Initiating steps to set up and putting in place the Incubating Entity in collaboration with MoPNG, including funding mechanism.
2. Initiating steps to set up PDSN – The Ministry would have to undertake steps to set up the PDSN and seek approvals as required in this regard
3. Funding mechanism for PDSN – The funding requirements and mechanism of the PDSN would have to be put in place
4. ICT funds for State Governments for PDSN onboarding and operations – The Ministry would need to provide ICT funds to the States who are willing to be partners of the PDSN and take part in its operations
5. Co-ordinate with UIDAI for Aadhaar enrolment, authentication and related activities

8.2 MoPNG, Government of India

1. Participate, co-ordinate with the MoCAFPD with respect to the setting up of the Mission team, Incubating Entity and PDSN
2. Publishing policy for implementation of kerosene subsidy as cash transfer as per the Task Force recommendations.
3. Policy readiness for on-demand subsidy transfer from OMCs to State Governments and/or beneficiaries
4. Pilot as per the Report of the Task Force on Direct Transfer of Subsidies
5. Co-ordinate with UIDAI for Aadhaar enrolment, authentication and related activities

8.3 State Governments

1. Partnering with the PDSN – Entering into an MoU with the PDSN
2. SLAs and pricing for PDSN operations
3. Co-ordinate with UIDAI for Aadhaar enrolment, authentication and related activities

8.4 DFS and DOE, Ministry of Finance

1. Co-ordinate with all Scheduled Banks and RBI for setting up payments infrastructure.
2. Co-ordinate with UIDAI and Banks for setting up Aadhaar-enabled Accounts, Aadhaar Payments Bridge, and Aadhaar-enabled Payments System.

3. Co-ordinate with State Governments on transfer of subsidy from Government of India to State Governments on a timely basis.
4. Co-ordinate with State Governments on routing direct subsidy transfer payments into Aadhaar-enabled Bank Accounts.

8.5 NIC

1. Preparing requirements in light of PDSN – Once the State Government agrees to be part of the PDSN, the Department implementing the PDS in the State would have to undertake a number of steps as per the MoU between the State Government and PDSN. The NIC can assist in this implementation.
2. Technology readiness at field level for solution roll-out
3. Integration with the State Data Centres (SDC) and SWAN network
4. Customization and extension of the centralized PDSN solution at the state level

8.6 UIDAI

1. Co-ordinate with the Ministries and State Governments for Aadhaar enrolment
2. Co-ordinate with the Ministries, State Governments and PDSN in relation to using of Aadhaar authentication services
3. Assistance to Ministries and State Governments for use of Aadhaar enabled applications as well as technical assistance
4. Co-ordinate and participate in pilots in relation to Aadhaar enrolment and authentication
5. Co-ordinate the direct transfer of subsidy into Aadhaar-enabled Bank Accounts in collaboration with MoCAFPD, MoPNG, DFS, State Governments, and PDSN.

8.7 PDSN

1. Human resource recruitment - The team at the PDSN has to be created
2. Technology development – Responsible for building the various components of the software
3. Operations – responsible for operations of central infrastructure such as data centre, contact centre, etc.
4. MOUs, Agreements, Pricing with States
5. Co-ordination with NIC for the state level implementation and roll-out
6. Awareness and communication material and templates
7. As-is study – Undertake an in depth study of the current status of computerization across States

9. Implementation action plan and timelines

Subsequent to the necessary approvals by Government of the recommendations of the Task Force, the following steps need to be undertaken to implement the IT strategy in PDS:

Sl.No.	Detail	Timeline
1.	Setting up of Incubating Entity (consisting of Mission Team including members from MoCAFPD, MoPNG, and a professional consultancy)	By December 2011
2.	Incubating Entity participating with willing States	By December 2011
3.	Incubating Entity undertaking pilots in a few States	By March 2012
4.	Setting up of the PDSN	By April 2012
5.	PDSN partnering with willing States	By April 2012
6.	PDSN taking up Pilots in a few States	December 2012
7.	Full coverage of participating States	Ongoing

10. Annexure I: Terms of Reference

F. No. 22(02)/PF II/2011

Ministry of Finance

Department of Expenditure

(PF-II Division)

New Delhi, dated the July 13, 2011

OFFICE MEMORANDUM

Subject: *IT Strategy for PDS and an implementable solution for direct transfer of subsidies on food and kerosene—Task Force regarding*

Reference may please be made to this Department's communication of even number dated February 14, 2011 vide which a Task Force was constituted under the Chairmanship of Shri Nandan Nilekani, Chairman, Unique Identification Authority of India (UIDAI) to recommend and implement a solution for direct transfer of subsidies on Kerosene, LPG and Fertilizer to the intended beneficiaries.

2. It has been decided to extend the Terms of Reference of the Task Force to the reforms of PDS, so as to also include the following:
 - i. Identify and suggest required changes in the existing systems, processes and procedures, IT frameworks and supply chain management;
 - ii. Recommend institutional mechanisms to implement the IT strategy for PDS; and
 - iii. Examine and suggest an implementable solution for direct transfer of subsidies on food and kerosene to intended beneficiaries with the use of Aadhaar numbers (Unique Identification numbers), Aadhaar enabled transactions and Aadhaar authentication infrastructure.
3. Task Force will submit its Report on an IT Strategy for PDS and an implementable solution for direct transfer of subsidies on food and kerosene by August 31, 2011. The Task Force may consult the State Governments and other stakeholders in this regard.
4. The MoCAFPD shall provide secretarial assistance to the Task Force **for this particular mandate**. Joint Secretary (BP, PD & NFSA) is nominated to function as the nodal officer.

11. Annexure II: Draft MoU between Incubating Entity/ PDSN and States

Draft Memorandum of Understanding between Public Distribution System Network and the Government of _____ (State Govt/ Union Territory)

Memorandum of Understanding between the Public Distribution System Network (“PDSN”)

And

For the implementation of IT solutions for PDS in the State of _____.

This Memorandum of Understanding (MoU) has been executed on the _____ day of _____ between the Public Distribution System Network (hereinafter referred to as “PDSN”) and the _____ (hereinafter referred to as “Client”)

Preamble

Whereas Government of India through the MoCAFPD and MoPNG has set up the PDSN as a Section 25 company under the Companies Act, ____ to implement and operate the IT infrastructure for PDS across the country .

Whereas, the Client seeks to avail the services of PDSN to develop the IT infrastructure for PDS in the State of _____

Whereas, this MoU sets out the broad understanding of the parties in order to develop, implement and operate the IT infrastructure for PDS delivery in the State of _____.

Whereas, the Client and PDSN have set up a joint working group comprising of representatives of the Client and PDSN to coordinate, facilitate and enable the development, implementation and operation of the IT infrastructure for PDS delivery in the State of _____. (INSERT details of a core team/ committee/ group, etc)

Whereas this MoU shall come into effect from _____.

1. Definitions - Unless the context otherwise requires:

1.1. “Client” shall mean the Government of _____ that is availing the services of PDSN to develop the IT infrastructure for PDS in the State of _____

1.2. “IEC” Information Education and Communication

1.3. “PDS” shall mean the Public Distribution System

- 1.4. “PDSN” shall mean Public Distribution System Network or its Incubating Entity
- 1.5. “RFP” shall mean request for proposal
- 1.6. “RFQ” shall mean request for quotations
2. PDSN offers end to end IT solutions and project management support to the Client for all IT operations related to PDS such as software development, specification of data, device, and various technology standards, data centre operations, contact centre operations, analytics and business intelligence, transparency portal and other related services.
3. PDSN will have dedicated teams to work with the client in developing and implementing these solutions on the field and providing support for the effective execution of the IT infrastructure developed for the Client.
4. This MoU between the PDSN and the Client sets out general and broad-based intentions of both Parties for collaboration and as an umbrella understanding for facilitation of subsequent contracts, agreements and documents relevant for the implementation of the IT solution required for the Client. The broad framework of services offered and obligations of the parties are detailed below
5. PDSN offers a wide range of services that can be implemented in phases in the process of developing the end to end infrastructure solution for PDS. The Client has the option to choose services based on their needs, their state of computerisation and policies. The details of these services are attached as Annexure 1.
6. While PDSN provides end to end solutions which includes IT solutions as well as project management and implementation, the Client can choose the module or the modules that are relevant and applicable to the Client.
7. To create the relevant PDS IT infrastructure the Client will need to put in place systems and will require access to several service providers who can deliver on the requirements of a project of this nature. PDSN shall provide the required support and develop the ecosystem for the effective implementation of the project. The Client may choose to use some of these services as a whole or in part or opt to develop their own framework. In order to effectively implement the project PDSN shall:
 - 7.1. Conduct proof of concept studies and pilots to test the solutions and services being developed for the Client.
 - 7.2. Put in place processes, documents, and teams to guide the Client through the process of creating the appropriate PDS IT infrastructure for the Client.
 - 7.3. Set up an internal team comprising consultants, project managers, and technical and domain specialists to support implementation and on boarding of the Client.

- 7.4. Create an ecosystem of implementation partners to make it easy for the Client to use for the implementation of the project.
- 7.5. Provide solution consultants to work with the Client to define and execute the PDSN solution across the state. They will assist in on boarding, appointing of all other execution agencies and partners, and monitoring their performance. They will identify and define business requirements, business processes, and system integration requirements with existing systems of the State Government. The solution consultants will also advise on business process re-engineering for effective computerization, and change management procedures to facilitate a smooth transition.
- 7.6. Prepare handbooks and on boarding tool kits which shall include readiness checklists, process guidelines, implementation standards and other relevant materials required for the implementation of the project.
- 7.7. Create standardised content and where necessary empanel agencies that may be leveraged by the Client implementation partners in order to facilitate speedier adoption and execution of the program. Such as:
 - 7.7.1. Training content and agencies for various stakeholders
 - 7.7.2. IEC content, agencies, formats, and usage guidelines
 - 7.7.3. Project plan and readiness checklists
 - 7.7.4. Governance framework such as Joint Working Groups
 - 7.7.5. Change management plan comprising of a stakeholder analysis approach
- 7.8. Facilitate the engagement of service providers by defining the roles and responsibilities of these agencies, adoption of standard processes, technology standards, and engagement models.
- 7.9. Empanel service providers across various categories to meet the needs of the Client as deemed necessary on an ongoing basis.
- 7.10. Create appropriate guidelines for the Client to hire and engage these service providers by providing templates for RFP/RFQ, scope of services, and a basic financial model, among other things.
- 7.11. Assist the Client in identifying software solution providers to enable the integration of PDSN with the Client's over all IT solution.
- 7.12. Develop independent audit mechanisms which can be used by the Client to assess performance levels of PDS in their State.

8. The Client shall :

- 8.1. Co-operate and collaborate with PDSN in conducting proof of concept (PoC) studies, pilots to test the working of the technology, the services and solutions being developed to build the IT infrastructure for PDS in the State of _____.
- 8.2. Create a joint working group to collaborate, guide, oversee monitor the implementation of the project.
- 8.3. Enter into a contract for services with PDSN which shall detail the services that the Client is subscribing to, terms and conditions of delivery and payment for services.
- 8.4. Pay for the services provided by PDSN as per agreed rates details of which shall be captures in the contract for services.
- 8.5. Cooperate and collaborate with and provide all assistance and support to employees, staff, consultants, advisors and contractors of PDSN to effectively implement the project.
- 8.6. Provide logistic and liaison support to the staff and representatives of PDSN they visit the offices of the Client or the field.
- 8.7. Work with the PDSN to resolve difficulties faced on the ground in the implementation of the project.

Miscellaneous

9. PDSN is responsible for the solutions and services provided by it within the framework of the agreement / contract entered into between PDSN and the Client. PDSN shall not be held responsible or liable for any consequences direct or indirect to the Client or any third party as a result of implementing solutions, processes and recommendations created or made by PDSN.
10. Intellectual property in all solutions, documents and materials created shall belong to PDSN and PDSN may use the same in services provided to other Clients.
11. All disputes shall be referred to arbitration; the arbitrator shall be a person of standing appointed by mutual agreement of both parties.
12. Any provision of this MoU may be amended or waived if, and only if, such amendment or waiver is evidenced by a written instrument signed by duly authorised representatives of the Parties, or, in the case of a waiver, by the Party against whom the waiver is to be effective.

IN WITNESS WHEREOF, the undersigned have executed this MoU, in duplicate, as of the date set forth above.

Annexure 1

Services offered by PDSN described in phases

1. In Phase I the focus will be on information visibility and transparency, the PDSN services shall include
 - 1.1. The computerisation of Ration card issuance, along with capture of the beneficiary and family details.
 - 1.2. Procurement, product movement (food and kerosene), transparency and contact centre.
 - 1.3. Incorporate Aadhaar linkage processes into the Clients workflows of Ration Card registration and distribution. Enrolment into Aadhaar and linking it to the Ration Card will ensure de-duplication of the PDS beneficiary database as well as address some of the exclusion and inclusion errors in the PDS system.
2. In Phase II, PDSN will enable integration and linkages, the services provided in this phase
 - 2.1.1. Aadhaar when sufficient coverage has been achieved.
 - 2.1.2. Integration with the Client's choice of token for delivery of benefits such as vouchers, smart cards, electronic coupons or any other token of the Client's choice.
 - 2.1.3. Implementation of all remaining modules of the Core Subsidy Management System, which include integration with other external networks and systems such as:
 - 2.1.3.1. Expenditure Information Network
 - 2.1.3.2. Payments networks
 - 2.1.3.3. CSMS implementations of other ministries
 - 2.1.3.4. Aadhaar-based solutions for Ration Card registration, identification, authentication, and payments
 - 2.1.3.5. Other e-governance systems that are developed over time.
 - 2.2. Integration with the above systems in Phase II will also make it possible for PDSN to offer various subsidy management models such as:
 - 2.2.1. Aadhaar linkage of tokens (vouchers, smartcards, electronic coupons etc.)
 - 2.2.2. Full portability of benefits, allowing beneficiaries to visit any FPS.
 - 2.2.3. Provide States with a choice between various subsidy models for food, which include beneficiary authentication at the time of delivery:

- 2.2.3.1. Product movement and sale at subsidized price
- 2.2.3.2. Product movement and sale at market price, with reimbursement of subsidy directly to the beneficiary
- 2.2.3.3. Provide choice to beneficiaries to receive a direct cash transfer into their Aadhaar-enabled bank account instead of food
- 2.2.4. Direct transfer of subsidy to Aadhaar-enabled bank accounts of beneficiaries for kerosene
- 2.3. In addition to designing the abovementioned technology framework, the PDSN will also offer services that will enable management of day to day operation of all member states.
 - 2.3.1. Data Centre Operations: The Data Centre will house all the technology necessary for operations. The best practices in Data Centre management and operations will be followed. Multiple Data Centres will be set up in different geographies for fault tolerance and redundancy.
 - 2.3.2. Contact Centre operations: The PDSN will manage Contact Centre operations for purposes of distributing information (through SMS/Email/Phone etc.), and reporting of grievances. It will also provide a helpdesk to the State Governments for purposes of troubleshooting day-to-day operations.
 - 2.3.3. A Network Operations Centre (NOC): The NOC will manage all operations, such as tracking the procurement of food and kerosene, tracking the movement of goods, inventories at Fair Price Shops, activation/de-activation of Fair Price Shops, predicting demand and shortfalls in supply, among other things.
 - 2.3.4. Analytics and fraud management - Analytics is the structured process of converting data to insights for aiding decision making. Analytics is a soft infrastructure that aids other functions in improving decision making by delivering the right data and insights at the right time in an easy to comprehend manner. With the explosion of data and technology, analytics is increasingly being recognized as an important support function in organizations. The huge amount of meta-data that the common software platform generates can be mined to provide the entire ecosystem insights to improve operational efficiency. Data can serve as the common language for processes across the interconnected PDSN eco system to track against the same goals.

